



## Micro: IO-BOX Expansion Board

SKU:MBT0005

# INTRODUCTION

Micro: IO-BOX is a micro:bit multifunctional expansion board with on-board Li-ion battery power, delicate appearance and easy to use. We integrated numerous functions on the 6cm×6cm board such as 2-way driver motor, 9-way IO port, 2-way I2C port, 1-way serial port, 1-way buzzer, 4-way RGB LED, Li-ion battery box, charge circuit, emergency power interface, etc.

We design an outer protective cover for the product to make it more durable and indestructible. Besides, we also paid close attention to the safety of using the product, especially when most users are children. On the market, currently, some manufacturers adopt 18650 battery for their products. However, this kind of battery has explosion threats to people due to its high capacity and large size. Therefore, after a long-term testing, we selected CR123A 3.6V lithium rechargeable battery of 1000mA. This kind of battery features small size, high capacity and high safety. What's more, we set short circuit and reverse connection protection for it to further improve the safety in using Li-ion Battery.

In order to provide a stable power supply, we employ a high-cost boost-buck power management solution. As we know, a motor's instantaneous current can reach up to 1A at its starting instant, which is a big challenge for power supply. So we specially carried out a strict test on our product: we make two TT motors keep rotating forward and reversely continuously, and even in such a condition, the board and motor can still work about 1.5 hours until running out of the battery. In normal operation, the battery can work for over 6 hours.

## FEATURES

- Supported Battery specification: CR123A Li-ion battery 1000mA(Battery of this type is on sale)
- Average Continuous Usage Time: 6h(the actual time may differ from the description out of different using situation)
- External Power Supply: 3.7V~5V( Auxiliary 3 AA battery holder is on sale)
- Charging Interface: microUSB 5V Support computer USB charging and cell phone charger
- Supported Motor Voltage: 3V~6V

## SHIPPING LIST

- Micro: IO-BOX      x1

# SPECIFICATION

- Supply Voltage: 4.5-5.5V
- Battery Type: CR123A 3.6V Rechargeable Li-ion Battery
- Power Switch: 1
- Charging Current: 350mA
- Charging Time: 2.5h
- Digital Output Voltage: 0V/3.3V
- Analog Input Voltage: 0~3.3V DC
- On-board Buzzer: 1-way(PO)
- Buzzer Switch: 1
- On-board RGB: 4 WS2812B (P15)
- Motor Interface: 2-way(IIC)
- Micro: bit Interface: 9-way (P0, P1, P2, P8, P12, P13, P14, P15, P16)
- IIC Interface: 2-way
- UART Interface: 1-way
- Dimension: 61×61mm/2.40×2.40"